

**ROCK HEDGE FARM  
STREAM AND WETLAND MITIGATION BANK**

**PROSPECTUS**

**AUGUST 2008  
*REVISED OCTOBER 2008***

***PREPARED FOR:***

ROCK HEDGE STREAM MITIGATION LLC  
20744 AIRMONT ROAD  
BLUEMONT, VIRGINIA 20135-2111

## **I. INTRODUCTION**

Rock Hedge Stream Mitigation LLC, the Bank Sponsor, along with Timmons Group, the Sponsor's Agent, propose to establish the Rock Hedge Farm Stream and Wetland Mitigation Bank (Bank) in Loudoun County, Virginia. Timmons Group has extensive wetland and stream restoration, environmental permitting, watershed assessment and modeling, stormwater engineering, and erosion and sediment control design and monitoring experience. Timmons Group has worked on many compensatory mitigation projects including bank sites in the mid-Atlantic region.

The purpose of the Bank is to provide offsite compensation for the unavoidable loss of streams, wetlands, and their functions as a result of unavoidable aquatic resource impacts resulting from development projects authorized under Section 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act and Section 62.1-44.15:5 of the Code of Virginia provided such activities have met all applicable requirements and are authorized by the appropriate agencies.

## **II. ESTABLISHMENT OF THE BANK**

A. Mitigation Banking Instrument (MBI): The Bank Sponsor proposes the Bank for administering mitigation projects. The MBI and the development and operation of the bank will be in accordance with the "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, 33 CFR 332" and will follow the most current version of the Mitigation Banking Template provided by the Norfolk District, U.S. Army Corps of Engineers (COE).

The Bank Sponsor proposes a combination of restoration, enhancement, and preservation of riparian systems and the associated streams and wetlands for the purpose of generating compensation credits. The Bank Sponsor will provide for the long-term preservation and management of the project areas included in the Bank.

B. Permits: The Bank Sponsor will obtain all documentation, permits, and other authorizations required to establish and maintain the Bank.

C. Bank Development Plan: A MBI will be designed to provide the framework for the mitigation banking program. Mitigation sites included in the MBI will be designed by developing mitigation plan(s) that will be submitted to the Interagency Review Team (IRT) for review and approval.

Development of the mitigation sites will begin with the submission of a conceptual mitigation plan to the IRT for evaluation. If the IRT's review of the conceptual mitigation plan is favorable and the site is determined to be a feasible project, the Bank Sponsor will proceed with preparing the final mitigation plan. Once developed, the final mitigation plan will be submitted to the IRT for review and approval.

Upon approval, the final mitigation plan for the mitigation site will be attached as an Addendum to the MBI, and the mitigation site will be deemed a component of the MBI.

Credits will be released consistent with the schedule of credit availability in accordance with the final mitigation plan. The approved Bank Site may be left undeveloped if no pre-sale or other credits have been debited from the site.

In the event the final mitigation plan is not approved, the IRT will provide the Bank Sponsor with specific reasons for not approving the submittal. The Bank Sponsor may resubmit a revised final mitigation plan with specific modifications or justifications that address the IRT concerns.

D. Financial Assurance Requirements: The Bank Sponsor will provide financial assurance for the Bank as part of the mitigation plan. Acceptable forms of financial assurance will be established in the MBI.

E. Real Estate Provisions: The Bank Sponsor will record a restrictive covenant, easement, or similar maintenance agreement for the Bank by amendment. This agreement may also be transferable to an acceptable conservation organization upon fulfillment of project objectives with Bank Site ownership remaining with the titled owner. The Bank Sponsor will provide for the perpetual protection and preservation of the Bank Site through maintenance agreements, restrictive covenants or conservation easements. These provisions will conform to the current Norfolk District, COE guidance with language to allow for road easements, road/bridge crossings, horse paths, hike/bike trails, and other activities. Each real estate instrument used must be approved by the IRT.

### **III. OPERATION OF THE BANK**

A. Service Area: The primary Geographic Service Area (GSA) is the Middle Potomac-Catoctin Watershed as defined by Hydrologic Units Code (HUC) 02070008. This area is located in the center of the Mid-Atlantic Region, within the Potomac Sub-Region. The proposed secondary GSA would include HUCs adjacent to the primary service area. This includes the Middle Potomac- Anacostia-Occoquan Watershed (HUC 02070010). A HUC map illustrating the Geographic Service Area of the proposed project is included as Exhibit 1: Service Area Map.

B. Conditions on Debiting (Credit Availability and Accounting Procedures): The Bank Sponsor will establish and maintain a Banking Ledger which documents credits and debits to the Bank Site account. Each time an approved debit/credit transaction occurs, the Bank Sponsor will submit a statement to the permitting agencies. The Bank Sponsor will also generate an annual ledger report to be submitted to all members of the IRT. The ledger will be available for inspection upon written request by any participating agency.

C. Use of Credits: The following types of projects may be eligible to use the Bank:

1. All activities regulated under Section 10 of the Rivers and Harbors Act, Section 404 of the Clean Water Act and/or the Virginia Water Protection Permit Regulations (9 VAC 25-210) located within the primary GSA of this wetland and stream mitigation bank may be eligible to use the Bank as compensatory mitigation for unavoidable impacts.

2. Credits may be used to compensate for environmental impacts under other programs (civil works, Superfund removal and remedial, supplemental environmental projects for state and Federal enforcement actions, etc.)
3. For projects within the GSA of the Bank that require authorization with a Nationwide Permit (NWP) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, Norfolk District State Program General Permit (SPGP), and/or a Virginia Water Protection Permit, and if the authorization requires compensatory mitigation, credits from the Bank may be used to satisfy these compensatory mitigation requirements if the Bank Sponsor and the third party permittee reach a mutually acceptable financial agreement and subject to regulatory approval on a case by case basis.
4. For projects within the primary GSA of the Bank that require authorization with an Individual Permit (IP) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act and/or Virginia Water Protection Permit, the COE and Virginia Department of Environmental Quality (DEQ), in consultation with the other regulatory and resource agencies, will determine the eligibility of such projects to use the Bank on a case-by-case basis. Once the COE and/or DEQ have determined that mitigation in the Bank ecologically preferable mitigation alternative, mitigation may be provided by the use of the mitigation credits from the Bank as determined by the COE and/or DEQ for each agency's respective permits if the Bank Sponsor and the third party permittee reach a mutually acceptable financial agreement.
5. Limited use of the Bank for projects outside the service area will be considered by the IRT on a case-by-case basis.

#### **IV. MAINTENANCE AND MONITORING OF THE BANK**

A. Maintenance, Monitoring and Success Criteria: The Bank Sponsor will provide the IRT 'as-built' drawings of the mitigation activities once construction is completed.

Prior to the advance release of credits, The Bank Sponsor will provide appropriate financial assurance acceptable to the IRT in accordance with the terms of the MBI or site-specific mitigation plan. The financial assurance requirements will be reduced over time as the mitigation plan is implemented. The Bank Sponsor will ensure all monitoring and maintenance costs will be undertaken during the success criteria time period.

The Bank Sponsor will provide maintenance and monitoring in accordance with terms and conditions outlined in the MBI and mitigation plan following the completion of construction and planting. Monitoring will include data collection for the indicators of success specified at the Bank Site. Monitoring reports will be submitted to the IRT according to the schedule set forth in the mitigation plan and will be used to evaluate site performance relative to the performance criteria established in the mitigation plan. Remedial action may be necessary during the operational life of the Bank to meet the performance criteria. If the Sponsor does not follow the approved site development plan and as a result, the performance criteria are not achieved, the Sponsor will implement corrective measures to achieve performance criteria or

identify other successful areas not previously monitored for compensation credit within the Bank. If the Sponsor has followed the approved plan but the performance criteria are still not fully met, the IRT will work cooperatively to determine measures to achieve the performance criteria while minimizing additional costs.

B. Long-Term Protection: Consistent with the conditions of the MBI, a maintenance agreement, conservation easement or declaration of restrictive covenants will be recorded prior to the sale of any credits to assure preservation of these lands in perpetuity. Copies of documents of long term protection measures will be included in the mitigation plan. The approved and debited credits in the Bank Site will be retained in perpetuity by the Bank Sponsor.

Decisions concerning the operational life of the Bank Site, long-term monitoring/management, remedial actions, and financial assurances will be made in accordance with Section II.E. of the Federal Banking Guidance (November 28, 1995).

These decisions will be agreed upon in the final Bank Site mitigation plan signed by the Bank Sponsor and the participating agencies.

C. Long-Term Management and Maintenance Plan: The Long-Term Management and Maintenance Plan will contain specific objectives that address the long-term management of the Bank Site. The Long-Term Steward will document that it is achieving each objective or standard by submitting status reports to the IRT on a schedule approved by the IRT. A primary goal of the Bank is to create a self-sustaining natural aquatic system that achieves the intended level of aquatic ecosystem functionality with minimal human intervention, including long-term site maintenance. Natural changes to the vegetative community, other than changes caused by non-native/invasive weeds, that occur after all Bank performance standards have been met are not expected to require remediation. The Long-Term Management Plan will include as appropriate the following provisions for:

1. Periodic patrols of the Bank Site for signs of trespass and vandalism. Maintenance will include reasonable actions to deter trespass (*e.g. mark property boundaries and post "No trespass"*) and repair vandalized Bank features (*e.g. collect and dispose of rubbish including "white goods" and roofing shingles*).
2. Monitoring the condition of structural elements and facilities of the Bank Site such as signage, fencing, roads, and trails. The Long-Term Management and Maintenance Plan will include provisions to maintain and repair these improvements as necessary to achieve the objectives of the Bank and comply with the provisions of the real estate instrument providing protection to the site. Improvements such as access roads, berms, or water control structures that are no longer needed to facilitate or protect the ecological function of the Bank Site may be removed or abandoned if consistent with the terms and conditions of the recorded real estate instrument.
3. Inspection of the Bank Site annually to locate invasive Species. Any invasive plant species discovered on the Bank Site and occupying more than 5% cover in any given cell, field, or block should be controlled. In the event the IRT determines that the watershed or drainage basin within which the Bank is located becomes infested

with these species in the future, so that their effective control on the Bank Site is either no longer practicable or unreasonably expensive, the IRT will consider appropriate changes to the Long-Term Management Plan.

Funds from the Catastrophic Event & Long-Term Management Fund may be used for provisions (1)-(3) above.

## **V. RESPONSIBILITIES OF THE MITIGATION BANK REVIEW TEAM (IRT)**

The IRT agrees to:

- A. Review and provide comments on conceptual and final mitigation plan submittals within 60 days of receipt.
- B. Review and provide comments on annual reports within 60 days of receipt.
- C. Review and provide comments on adaptive management plans and/or required remedial actions plans within 60 days of receipt.

## **VI. RESPONSIBILITIES OF THE BANK SPONSOR**

The Bank Sponsor agrees to:

- A. Establish and/or maintain the mitigation site until 1) credits have been exhausted and the debited Bank Site has satisfied all conditions in the approved mitigation plan, or 2) banking activity is voluntarily terminated through written notice by the Bank Sponsor with approval of the IRT.
- B. Submit to the IRT an annual report describing the condition of the mitigation site in relation to the success criteria outlined in the final mitigation plan, as well as relating the overall activity of the Bank Sponsor of the Bank.
- C. Develop a Long-Term Management and Maintenance Plan and/or implement appropriate remedial actions for mitigation sites in coordination with the IRT in the event the mitigation site fails to achieve the success criteria specified in the final mitigation plan.
- D. Assign its long-term management and maintenance responsibilities to the current landowner at the end of the active monitoring period, which will then serve as a Long-Term Steward (either the landowner or easement holder) in place of the Sponsor. However, the Sponsor and current landowner are considering donating the easement to a third party assignee for them to serve as a Long-Term Steward.

## VII. BANK SITE DETAILS

A. Introduction: The proposed Bank will focus on an approximately 252 acre parcel located south of Airmont Road and west of Bloomfield Road in Loudoun County, Virginia. A vicinity map showing the property boundary is included as Exhibit 2: Vicinity Map and driving directions from the intersection of Route 50 and Route 719 (in Upperville ) are as follows:

- Turn on Route 719 (Green Garden Road) heading north
- Drive approximately 4.5 miles and pass the intersection of Route 719 and 619 (Trappe Road).
- Stay straight on 719 for approximately 1,400 feet past 619 and turn right into Rock Hedge Farm.

B. Project Site Conditions: The Bank includes a portion of Beaverdam Creek, unnamed first and second order tributaries, adjacent floodplain, forested wetlands, degraded emergent wetlands, and upland corridors. Typical site photographs are included as Exhibit 3. Additional site conditions are as follows:

Soils. According to the Loudoun County Soil Survey the lower portions of the Site are underlain predominantly by Hatboro Sandy Loam (4A) and Mongle loam (10B) soils (see Exhibit 4: Environmental Inventory Map). Upper areas are underlain predominantly by Eubanks Loam (28C). Hatboro Sandy Loam is considered hydric; the lower soils are ponded or occasionally flooded while the upper soils are rarely flooded.

Wetlands. The US Fish & Wildlife Service, through its National Wetland Inventory (NWI) program, has mapped much of the Bank Site (see Exhibit 4: Environmental Inventory Map). The mapped NWI wetlands on the Bank Site includes one palustrine forested (PFO) wetland and two palustrine unconsolidated bottom impoundments (PUB). Recent onsite reconnaissance has identified additional acreage of wetlands beyond those identified by the NWI mapping as shown on Exhibit 5: Preliminary Wetland Delineation Map. The additional wetland areas are dominated by degraded palustrine emergent (PEM) wetlands that are currently accessed by livestock grazing and/or are maintained in association with controlled hay production to supplement the winter feeding regime of the resident livestock. These degraded PEM systems are positioned within floodplain areas of streams located onsite and/or derive hydrology from groundwater seeps/springs that discharge from shallow fractured bedrock aquifers. Minor areas of mature PFO wetlands exist in the southern portion of the site adjacent to and within a localized portion of largely undisturbed floodplain west of Beaverdam Creek.

Stream Assessments. In order to understand and document the existing conditions of onsite streams, field stream assessments were performed in accordance with the Unified Stream Methodology (USM). The stream types and conditions vary; thus, stream assessments were conducted at 17 separate stream reaches to document the variations. A drawing showing the location of the stream assessment reaches and their associated RCI is included as Exhibit 6: Unified Stream Methodology Assessment Map. The complete results of the USM assessments are provided as field data sheets in Exhibit 6: Stream Assessment Forms, including representative photographs from each of the stream assessment reaches.

Threatened and Endangered Species. A query of available on-line threatened and endangered species information was performed to gain insight regarding the presence of sensitive flora and fauna in association with the referenced project. A search of the Virginia Department of Natural Heritage (DNH) database was performed to identify known sensitive species in Loudoun County and the search did not return any results.

Additionally, a search of the Virginia Game and Inland Fisheries (DGIF) databases was performed to identify known sensitive species within a 2-mile vicinity of the project. The Bald Eagle (*Haliaeetus leucocephalus*), Upland Sandpiper (*Bartramia longicauda*), Migrant Loggerhead Shrike (*Lanius ludovicianus migrans*), Loggerhead Shrike (*Lanius ludovicianus*), Green Floater (*Lasmigona subviridis*), Wood Turtle (*Glyptemys insculpta*), and the Henslow's Sparrow (*Ammodramus heslowii*) are known or likely to occur within a 2-mile radius of the project area. After reviewing the habitat requirements of each of these species and the temporary nature of the proposed impacts, Timmons does not anticipate any adverse impacts from the construction of the proposed project.

A copy of both reports is included as Exhibit 7.

Cultural Resources. Historical and cultural resource information for the proposed Bank Site was obtained from the Virginia Department of Historical Resources (DHR) Data Sharing System. A 2-mile radius search was performed from the property boundary. The results of the search showed historical and cultural resource sites within the vicinity of the project area but none were found within the project study limits. These historical and cultural resources are not anticipated to forego any adverse impacts due to the localization of construction activities being limited to the project study limits. A copy of the report is included as Exhibit 8.

D. Project Goals: The goal of the Bank is to restore self-sustaining, functional stream and wetland corridor to replace the functions and values lost due to unavoidable adverse impacts to streams and wetlands by development activities within the authorized service area. The Bank is anticipated to include the channel of Beaverdam Creek, unnamed minor tributaries, adjacent wetlands, and the riparian buffer. Some of the targeted functions include wildlife habitat, water quality, flood conveyance and storage, and erosion control. Protecting and enhancing the stream riparian buffer and onsite degraded wetland systems will achieve the functional goals of the stream mitigation portions of this project. The Bank will greatly enhance the existing drainage basin and the quality of water flowing to the Potomac River.

The Bank Sponsors propose to establish the stream corridor portion of the Bank by preserving or reestablishing at least 100-200 feet of riparian buffer along a 3,558-foot section of both banks of Beaverdam Creek and along both banks of several perennial and intermittent tributary streams that flow through the property. The Bank sponsors also propose to meet the Bank's goals through restoration or enhancement of contributing perennial and intermittent stream channels. Restoration modifications that may include but are not limited to Natural Channel Design (NCD) techniques, channel cross section and pattern alterations, bank stabilization and bioengineering techniques, grade control and in-stream structures, establishment and/or preservation of forested riparian buffers, and removal of detrimental land use activities (i.e.



livestock access/grazing) in appropriate riparian corridors.

Wetland enhancement and creation activities are proposed to include the restoration of degraded PEM wetlands, the creation of forested riparian wetlands, and the preservation of existing mature PFO wetlands. Restoration modifications for degraded PEM wetlands may include, but are not limited to livestock exclusion, minor grading, invasive species removal and control, reforestation, and the removal of direct anthropogenic alterations (e.g., ditching, potential drain tiling). Wetlands creation will utilize a methodology similar to that proposed for PEM wetland restoration and is proposed to occur in floodplain uplands with nearly level slopes adjacent to degraded PEM wetlands. The wetland creation plan will likely utilize minor grading to encourage surface soil horizon access to shallow groundwater resources and known onsite groundwater discharge features (seeps and springs). Potential to interrupt the connectivity of currently functioning groundwater drainage structures (i.e., terra cotta drain tiles) may provide further opportunity to facilitate wetland creation and provide hydrology for enhancement efforts. Additional field and research efforts to characterize the presence and extent of these onsite drainage features will be an integral part of the feasibility and design phase of the Bank.

The site will be manipulated with the goal of returning natural/historic functions to former wetland areas and to preserve and enhance stream and adjacent floodplain corridor areas. To accomplish the goals of this Bank, the Bank Sponsors, consistent with the MBI, will:

1. Use acreage within the bounds of the available property that has potential for restoring or creating wetlands or such other adjacent acreage that would provide for the preservation of existing valuable wetlands and stream riparian areas on the Beaverdam Creek flood plain and adjacent unnamed tributaries as an enhancement of the Bank's overall goals and objectives.
2. Develop a detailed mitigation plan that will include clearly-stated goals and objectives for the Bank. The mitigation plan will be based on a site-specific water budget and will provide detailed construction and planting plans and specifications for the wetland restoration/creation and riparian buffer enhancement work that will include the following basic elements:
  - a. Establish wetland hydrology through such measures as: disabling existing drainage structures, lowering grades if necessary, modifying soil structure to increase water storage capacity or to reduce permeability rates, and by regulating surface runoff by constructing or removing earthen berms and other topographic features and/or by installing hydrological control devices to regulate water flow from the site.
  - b. Design and implement a hydrological monitoring plan for confirmation of target wetland hydrology regimes that are consistent with the vegetative goals and objectives of the Bank.

- c. Develop wetland planting schemes that reflect the goals and objectives of the wetland banking portion of the project and that are compatible with the native wetland communities of the watershed.
  - d. Develop riparian buffer planting schemes that reflect the goals and objectives of the stream corridor banking portion of the Bank and that are compatible with the native wetland and upland communities of the watershed.
  - e. Develop and implement construction and post construction monitoring and contingency measures as necessary to meet established performance criteria.
- 3. Provide assurances of financial resources for the construction and maintenance of the Bank through a post-construction monitoring period to ensure that all performance criteria are met.
  - 4. The Sponsor will administer the compensation credit accounting of the Bank during its operational life (until all credits are debited) and provide for the long-term preservation and management of the wetlands and riparian buffers within the Bank.
- E. Establishment and Use of Credits: Based on the Preliminary Wetland Delineation Map, approximately 2.25 acres of wetland restoration/creation are proposed yielding approximately 2.25 wetland credits.

Additionally, Compensation Crediting Forms from the USM were prepared to estimate the potential stream credits. These forms are included as Exhibit 9: Compensation Crediting Forms and are summarized below:

Restoration: Restoration is proposed for 3,408 linear feet of stream channel resulting in a compensation credit of 6,075. The restoration of dimension, pattern, and profile of these reaches is proposed to improve the overall channel condition, stabilize channel banks, and re-establish hydraulic connectivity to flood prone areas. Stable natural streams for the same stream valley will be analyzed and used as reference streams in this design process. Additionally, live stakes will be installed along both banks to provide additional stream bank stabilization and supplemental riparian buffer plantings will be established.

Enhancement: Enhancement is proposed for 4,329 linear feet of stream channel resulting in a compensation credit of 3,966. Instream structures are proposed to improve the overall channel condition and stabilize channel banks. Additionally, live stakes will be installed along both stream banks to provide additional stream bank stabilization and supplemental riparian buffer plantings will be established.

Preservation: A 200 foot riparian buffer is proposed along both banks of all onsite streams including the restored and enhanced except in the area adjacent to the existing house. Compensation credit associated with preservation of the enhanced and restored streams is included in their associated total compensation credits for each. An

additional 70 compensation credits will be achieved by preserving the buffers along Reach 9 and 17.

F. Disclaimer: The MBI will not in any manner supersede or alter the statutory authorities and responsibilities, regulations, policies, and guidance of the signatory agencies or any other agency.

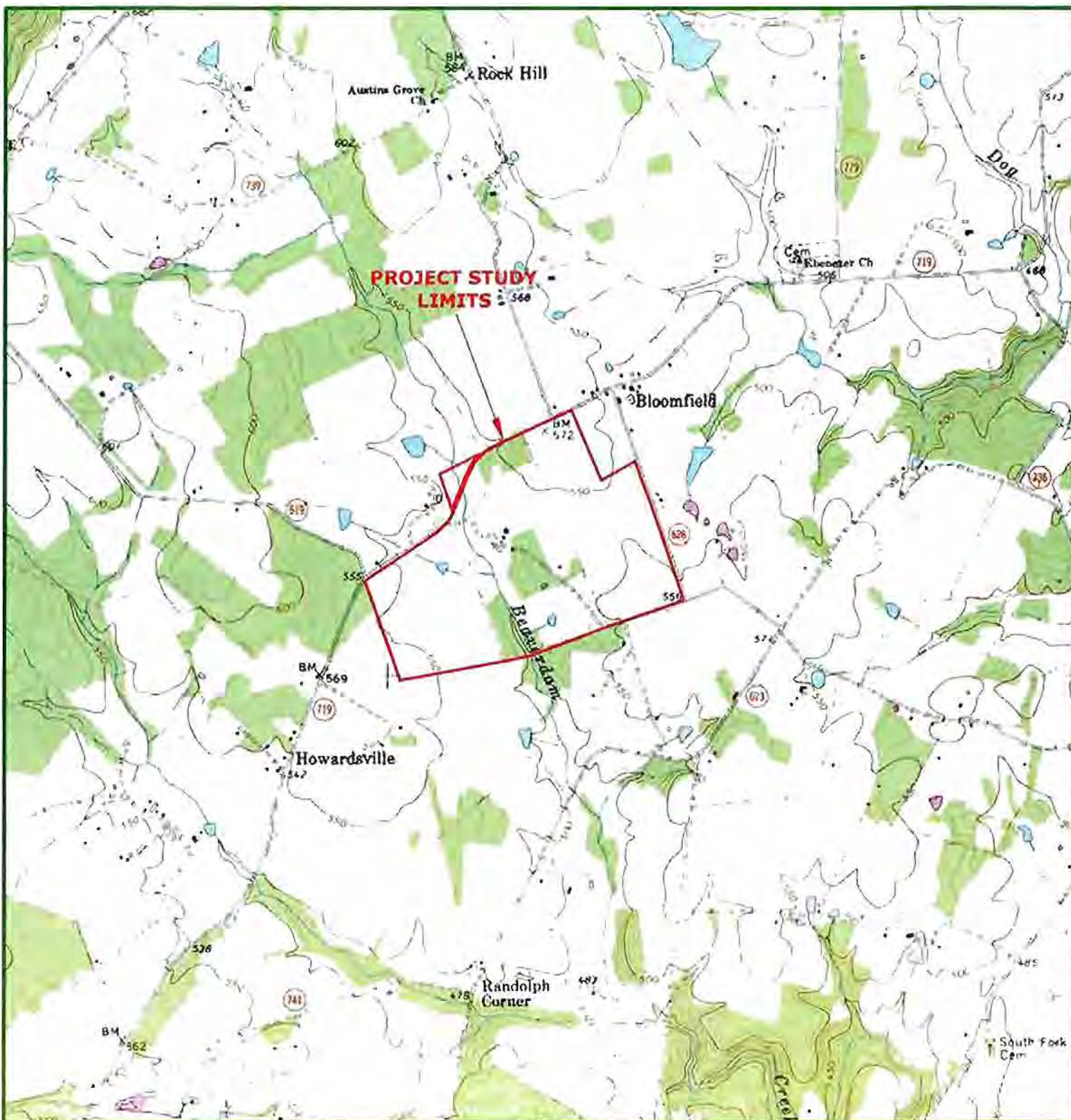
G. Anticipated Schedule for Completion:

- October 2008: submit MBI to IRT for approval and signature.
- February 2009: commence final site plan design.
- April 2009: after receiving all necessary approvals, submit bid documents.
- June 2009: commence construction.
- September 2009: complete construction.
- January 2010: commence planting.
- April 2011: 1<sup>st</sup> monitoring year.
- August 2011: submit 1<sup>st</sup> monitoring report.









# **ROCK HEDGE FARM** LOUDOUN COUNTY, VIRGINIA

JOB NUMBER: 26540

DATE: 8/20/08

SITE AREA: 252.49 ACRES

LATITUDE: 39°02'49" N

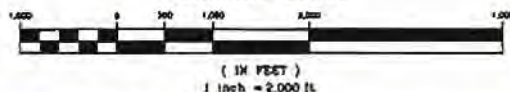
LONGITUDE: 77°49'31" W

## **TIMMONS GROUP**

YOUR VISION ACHIEVED THROUGH OURS.



### **GRAPHIC SCALE**



U.S.G.S. QUADRANGLE(S): BLUEMONT  
DATE: 1980

MIDDLE POTOMAC-CATOCTIN  
WATERSHED (HUC 02070008)



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 1: Photograph of Beaverdam Creek near the northern portion of the Site. The adjacent riparian areas are actively grazed and livestock access has compromised the bank structure resulting in overwidening in some portions of the channel.**



**Photo 2: Channel overwidening (foreground) and potential channel relocation (background) immediately downstream of Photo 1.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 3: View of Beaverdam Creek near the center of the Site showing a representative view of the grazed pasture areas which serve as the current channel buffers.**



**Photo 4: Example of channel condition and overwidening in Beaverdam Creek.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 5: Upstream view of potential channel relocation within Beaverdam Creek. The stream is currently linear in nature and is aligned adjacent to the stone wall at the western edge of the field (photo left). There is faint evidence of remnant channel segments east (photo right) within the grazed pasture.**



**Photo 6: View of a second order tributary to Beaverdam Creek showing existing channel condition including overwidening and bank instability.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 7: Channel condition and bank instability along Beaverdam Creek near the center of the Site.**



**Photo 8: Additional view of Beaverdam Creek channel condition downstream of Photo 7.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 9: Additional view of channel condition in Beaverdam Creek.**



**Photo 10: View of a second order tributary to Beaverdam Creek showing an existing degraded channel condition.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 11: Stock pond located in the northwest quadrant of the Site. This has been identified as a potential opportunity to restore the pre-existing stream channel at this location through removal of the pond.**



**Photo 12: Intermittent tributary flowing through pasture to the stock pond shown in Photo 11.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 13: View of pastured PEM wetlands west of Beaverdam Creek in the northern portion of the Site west of Beaverdam Creek.**



**Photo 14: View of adjacent and heavily grazed PEM wetland area northeast and adjacent to Photo 13 location.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 15: Hydric soils typical of those identified within the PEM wetlands shown in Photos 13 and 14.**



**Photo 16: Degraded PEM wetlands impacted by livestock access east of Beaverdam Creek.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 17: View of pastured PEM wetlands in the northwest portion of the Site.**



**Photo 18: View of pasture PEM wetlands near the central portion of the Site within the floodplain of Beaverdam Creek. These wetlands are spring fed and are drained by a cut ditch which routes flow to Beaverdam Creek.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**



**Photo 19: View facing south within pasture floodplain wetlands adjacent to Beaverdam Creek and south of Photo 18.**



**Photo 20: Hydric soils typical of those identified within the PEM wetlands shown in Photos 18 and 19.**



**Rock Hedge Stream and Wetland Mitigation Bank Site  
Loudoun County, Virginia**

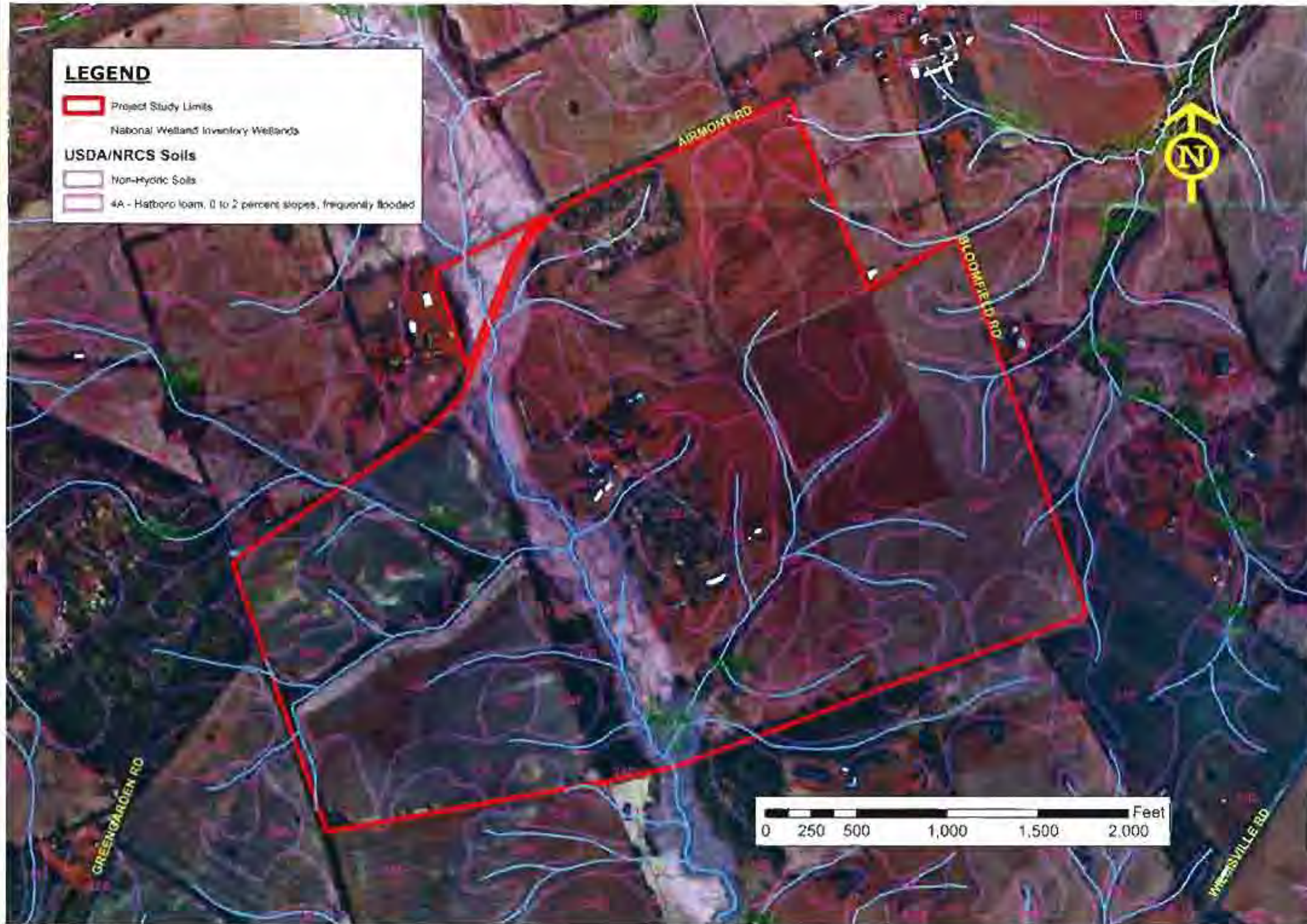


**Photo 21: View of PEM wetlands near the southeastern quadrant of the Site. These wetlands are drained by a cut ditch which routes flow to an unnamed first order tributary of Beaverdam Creek.**



**Photo 22: View of forested wetlands located west of and adjacent to Beaverdam Creek in the southern floodplain portion of the Site.**





# LEGEND

Project Study Limits

National Wetland Inventory Wetlands

## USDA/NRCS Soils

Non-Hydric Soils

4A - Hatboro loam, 0 to 2 percent slopes, frequently flooded

**TIMMONS GROUP**

**ROCK HEDGE STREAM BANK**

LOUDOUN COUNTY, VIRGINIA

**DRAWING 3: ENVIRONMENTAL INVENTORY MAP**

PROJECT: ROCK HEDGE STREAM BANK  
 PROJECT: ENVIRONMENTAL INVENTORY  
 PREPARED FOR: TIMMONS GROUP  
 PREPARED BY: TIMMONS GROUP

DATE  
 8/15/06

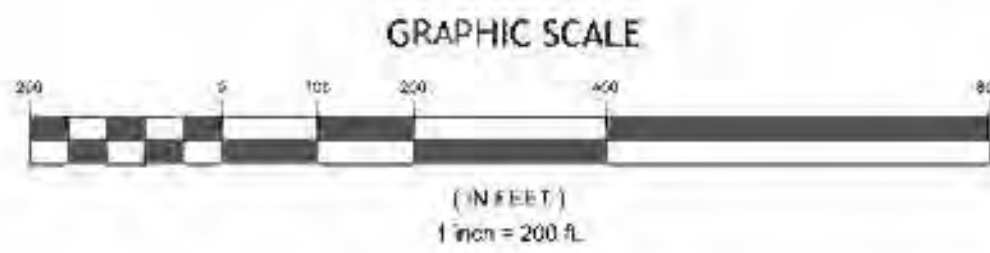
DRAWN BY  
 G. M.

SCALE  
 1" = 500'

FIG. NO.  
 26540



U:\2014\_26540-Rock\_Hedge\DWG\Sheet\Exhibit\26540C-MCM.dwg | Plotted on 8/16/2008 11:05 AM | by David Arrington



JURISDICTIONAL WETLANDS							
REACH ID	PFD (ft²)	PEM (ft²)	PSS (ft²)	POW (ft²)	R3 (L.F.)	R4 (L.F.)	DITCH (L.F.)
1					3,558	714	
2							
2A				25,816.15		225	
3						1,953	
4						395	
5						1,029	
6							
6A				30,500.29			
A		10,682.24					
B		177.13					
C		3,858.52					
D		5,276.80					
E		8,674.13					
F	10,190.62						
G	10,527.00						
H		76,312.16					
I		20,755.95					
J		3,670.95					
K		10,881.40				841	
TOTALS	20,718	140,289	0	56,316	3,558	4,316	0
ACREAGE	0.48	3.22		1.29			

PFD=Palustrine Forested Wetland; PEM=Palustrine Emergent Wetland; PSS=Palustrine Scrub/Shrub Wetland; POW=Palustrine Open Water; R3=Perennial Stream; R4=Intermittent Stream

LEGEND	
	PROJECT STUDY LIMITS (252.49 ACRES)
	WATERS OF THE U.S.
	OPEN WATERS
	EMERGENT WETLANDS
	FORESTED WETLANDS
	FIELD DATA STATION LOCATION
	FLAG LOCATION
	WETLAND IDENTIFICATION
	STREAM IDENTIFICATION
NOTES	
1. WETLANDS AND WATERS OF THE U.S. HAVE BEEN GPS LOCATED BY TIMMONS GROUP.	
2. PROJECT STUDY LIMITS ARE BASED ON COUNTY GIS AND ARE SUBJECT TO CHANGE PENDING A BOUNDARY SURVEY.	
3. WETLANDS AND WATERS OF THE U.S. HAVE NOT BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS.	
4. TOPOGRAPHIC INFORMATION IS FROM U.S.G.S. (BLUEMONT, 1980).	

